B. AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Previously canceled).

2. (Currently amended) A process for utilizing a supersonic nozzle for injecting gaseous fuel into a combustion chamber of a cylinder of a piston driven gaseous fuel engine, the process comprising the steps of:

providing a cylinder in a gaseous fuel engine having compressed gas at a cylinder pressure for combustion in a combustion chamber;

providing a valve body having an inlet for receiving gaseous fuel and an outlet for delivering such fuel directly into a combustion chamber, said outlet having a nozzle with a converging section coupled to a diverging section through a critical orifice for delivering gaseous fuel therethrough at a supersonic velocity directly into the [[~~a~~]] combustion chamber;

introducing gaseous fuel to the inlet at an injection pressure exceeding the cylinder pressure by a factor of at least 1.592; and

discharging ~~natural gas~~ gaseous fuel from the outlet at a supersonic velocity into the combustion chamber to produce mixing with [[a]] gas in the cylinder for combustion.

3. (Original) The process of claim 2, further comprising the step of configuring the nozzle with a ratio of cross-sectional area of said critical orifice to cross-sectional area of said diverging section to yield a supersonic fuel delivery velocity of about Mach 2.5 to 3.

4. (Original) The process of claim 2, wherein the injection pressure is at least 85 PSI, and wherein the cylinder pressure is at least 53 PSI.

5. (Original) The process of claim 2, wherein the cylinder pressure changes during the introduction of gaseous fuel at a supersonic velocity into the cylinder.

6. (Original) The process of claim 2, wherein the step of introducing gaseous fuel to the inlet comprises the step of introducing natural gas to the inlet.

7. (Original) The process of claim 2, wherein the gaseous fuel is provided at an injection pressure of between 100-150 PSI.

8. (Currently amended) A ~~fuel injection~~ supersonic injector assembly for injecting gaseous fuel directly into a combustion chamber above a piston of a gaseous fueled engine, the fuel injector assembly comprising:

a valve arrangement, the valve arrangement comprising:

an inlet for receiving gaseous fuel from a fuel source;

a valve actuator for controlling fuel flow through the inlet to an antechamber; and

a plurality of sonic nozzle passages in communication with the antechamber, each sonic nozzle passage having a converging section coupled to a diverging section through a critical orifice for delivering gaseous fuel therethrough at a supersonic velocity directly into [[~~a~~]] the combustion chamber.

9. (Original) The assembly of claim 8, wherein a ratio of cross-sectional area of each critical orifice to cross-sectional area of each diverging section of each sonic nozzle passage is configured to yield a supersonic velocity of about Mach 2.5 to 3.

10. (Original) The assembly of claim 8, wherein the plurality of sonic nozzle passages is comprised of at least two sonic nozzle passages.

11. (Original) The assembly of claim 8, wherein the plurality of sonic nozzle passages is comprised of at least three sonic nozzle passages.

12. (Currently amended) A gaseous fueled engine comprised of

a combustion chamber;

a ~~fuel injection~~ supersonic injector assembly for injecting gaseous fuel directly into the combustion chamber, the ~~fuel injector~~ supersonic injector assembly comprising:

a valve arrangement, the valve arrangement comprising:

an inlet for receiving gaseous fuel from a fuel supply;

a valve actuator for controlling fuel flow through the inlet to an antechamber; and

a plurality of sonic nozzle passages in communication with the antechamber and the combustion chamber, each sonic nozzle passage having a converging section coupled to a diverging section through a critical orifice for delivering gaseous fuel therethrough at a supersonic velocity directly into the combustion chamber; and

a fuel connection to a low pressure gaseous fuel supply, the fuel connection being operatively connected to the inlet.

13. (Currently amended) The gaseous fueled engine of claim 12, wherein the combustion chamber is a combustion chamber in a cylinder of a piston driven gaseous fueled engine.

14. (Original) The gaseous fueled engine of claim 12, wherein the combustion chamber is a combustion chamber in a gaseous fueled turbine engine.

15. (Original) The gaseous fueled engine of claim 12, wherein a ratio of cross-sectional area of each critical orifice to cross-sectional area of each diverging section of each sonic nozzle passage is configured to yield a supersonic velocity of about Mach 2.5 to 3.

16. (Original) The gaseous fueled engine of claim 12, wherein the plurality of sonic nozzle passages is comprised of at least two sonic nozzle passages.

17. (Original) The gaseous fueled engine of claim 12, wherein the plurality of sonic nozzle passages is comprised of at least three sonic nozzle passages.

18. (Original) The gaseous fueled engine of claim 12, wherein the gaseous fuel is natural gas.

19. (Original) The gaseous fueled engine of claim 12, wherein the gaseous fuel is provided at an injection pressure of between 100-150 PSI.

20. (New) A supersonic injector assembly for injecting gaseous fuel directly into a combustion chamber, the supersonic injector assembly comprising:

a valve arrangement, the valve arrangement comprising:

an inlet for receiving gaseous fuel from a fuel supply;

a valve actuator for controlling fuel flow through the inlet to an antechamber; and

a plurality of sonic nozzle passages in communication with the antechamber and the combustion chamber, each sonic nozzle passage having a converging section coupled to a diverging section through a critical orifice for delivering gaseous fuel therethrough at a supersonic velocity directly into the combustion chamber; and

a fuel connection to a low pressure gaseous fuel supply, the fuel connection being operatively connected to the inlet.

21. (New) The supersonic injector assembly of claim 20, wherein a ratio of cross-sectional area of each critical orifice to cross-sectional area of each diverging section of each sonic nozzle passage is configured to yield a supersonic velocity of about Mach 2.5 to 3.